What is claimed is:

1. A method of determining disease status of a patient suffering from a disease characterized by aberrant expression of one or more Her receptor heterodimers, the method comprising the steps of:

measuring directly in a patient sample an amount of each of one or more Her receptor heterodimers;

comparing each such amount to its corresponding amount in a reference sample; and

correlating differences in the amounts from the patient sample and the respective corresponding amounts from the reference sample to the disease status the patient.

2. The method of claim 1 wherein said disease is a cancer and wherein said patient sample is a fixed tissue sample, a frozen tissue sample, or circulating epithelial cells.

3. The method of claim 2 wherein said one or more Her receptor heterodimers are selected from the group consisting of Her1-Her2 receptor dimers, Her2-Her3 receptor dimers, Her1-Her3 receptor dimers, and Her2-Her4 receptor dimers.

4. The method of claim 3 wherein each of said one or more Her heterodimers are determined by the steps of:

providing for each of said one or more Her heterodimer a reagent pair comprising a cleaving probe having a cleavage-inducing moiety with an effective proximity, and one or more binding compounds each having one or more molecular tags attached thereto by a cleavable linkage, the molecular tags of different binding compounds having different separation characteristics;

mixing the cleaving probe and the one or more binding compounds for each of said one or more Her heterodimers with said patient sample such that the cleaving probe and the one or more binding compounds specifically bind to their respective Her heterodimer and the cleavable linkages of the one or more binding compounds are within the effective proximity of the cleavage-inducing moiety so that molecular tags are released; and

separating and identifying the released molecular tags to determine the presence or absence or the amount of said one or more Her heterodimers in said patient sample.

5. The method of claim 4 wherein said patient sample is said fixed tissue sample or said frozen tissue sample.

6. The method according to claims 3, 4, or 5 wherein said disease status is responsiveness of said patient to treatment with a dimer-acting drug.

7. The method of claim 6 wherein said cancer is selected from the group consisting of breast cancer, ovarian cancer, prostate cancer, and colorectal cancer.

8. A method of selecting a patient for treatment of a cancer with one or more ErbB-dimer-acting drugs, the method comprising the steps of:

isolating a patient sample containing cancer cells from a patient, wherein wherein the patient sample is a fixed tissue sample, a frozen tissue sample, or circulating epithelial cells;

measuring an amount of each of one or more Her receptor heterodimers in the patient sample;

comparing each such amount to its corresponding amount from a reference sample; and

selecting the patient for treatment with one or more ErbB dimer-acting drugs whenever an amount of one or more Her heterodimers from the patient sample exceeds the respective corresponding amount from the reference sample.

9. The method of claim 8 wherein said cell surface receptor dimer contains a Her2 receptor and said ErbB-dimer-acting drug is selected from the group consisting of 4D4 Mab, Trastuzumab (Herceptin), 2C4 (Omnitarg), and GW572016.

10. The method of claim 9 wherein said Her receptor heterodimer is selected from the group consisting of Her2-Her1, Her2-Her3, and Her2-Her4.

11. The method of claim 10 wherein said patient sample is a fixed tissue sample and wherein said Her receptor heterodimer is Her2-Her3 or Her2-Her1 and wherein said ErbB-dimer-acting drug is 2C4 or Trastuzumab (Herceptin).

12. The method according to claims 8, 9, 10, or 11 wherein said one or more Her receptor heterodimers are determined by the steps of:

providing for each of said one or more Her receptor heterodimers a reagent pair comprising a cleaving probe having a cleavage-inducing moiety with an effective proximity, and one or more binding compounds each having one or more molecular tags attached thereto by a cleavable linkage, the molecular tags of different binding compounds having different separation characteristics;

mixing the cleaving probe and the one or more binding compounds for each of said one or more Her receptor heterodimers with said patient sample such that the cleaving probe and the one or more binding compounds specifically bind to their respective Her receptor heterodimer and the cleavable linkages of the one or more binding compounds are within the effective proximity of the cleavage-inducing moiety so that molecular tags are released; and

separating and identifying the released molecular tags to determine the presence or absence or the amount of said one or more Her receptor heterodimers in said fixed tissue sample.